



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,248	05/26/2006	Jun Gao	284530US0PCT	3427

22850 7590 02/22/2010
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

SALVITTI, MICHAEL A

ART UNIT	PAPER NUMBER
----------	--------------

1796

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

02/22/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents

United States Patent and Trademark Office

P.O. Box 1450

Alexandria, VA 22313-1450

www.uspto.gov

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/566,248

Filing Date: July 8th, 2004

Appellant(s): GAO ET AL.

Marina I. Miller

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 30th, 2009 appealing from the Office action mailed April 1st, 2009.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

a) U.S. Patent No. 4,003,871 to *Costanza et al.*

b) U.S. Patent No. 5,908,872 to *Glück et al.*

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, and 6-11, 14-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,033,871 to *Costanza et al.*

Regarding claims 1, 4, 8: *Costanza* teaches a process for the preparation of an aqueous polymer dispersion by free radical aqueous emulsion polymerization (column 1, line 60). This process entails the polymerization of at least one ethylenically unsaturated monomer in the presence of a dispersant (surfactant; col. 1, lines 55-57).

As to process step (a₁₋₃), *Costanza* (Example 3; col. 8, lines 33-45) teaches charging water and at least one portion of at least one oil-soluble free radical initiator

Art Unit: 1796

(benzoyl peroxide; col. 8, line 39) into a reactor. A dispersant is present in the pre-emulsion (sodium lauryl sulfate). A portion of the added pre-emulsion has been interpreted as being part of the initial charge, since the heating step (b) is optional. Process steps (a₄-a₅) have been given no patentable weight as optional steps.

As to process step (b), as an optional step, this limitation has been given no patentable weight.

As to process steps (c₄₋₅) the main amount of water-soluble free radical initiator (potassium persulfate) is metered into the reaction mixture as part of the "pre-emulsion" (*Costanza* col. 8, lines 40-42). Because the heating step (b) is optional, the order of addition of water-soluble initiator in the beginning stage of *Costanza* (prior to initiation of polymerization, thereby not influencing the polymerization product or process) is a change in order of addition of starting reagents, which has been held to render *prima facie* obviousness (MPEP § 2144.04 IV. C. Changes in Sequence of Adding Ingredients). Steps (c₁) to (c₃), as optional limitations, have been given no patentable weight.

As to process step (d), *Costanza* teaches metering the monomer pre-emulsion (butadiene/styrene from Example 1).

Costanza is silent as to heating to an end temperature (T_E) in Example 3. However, *Costanza* teaches that the reaction mixture can be heated up to 80°C or above as the polymerization heads to substantial completion (col. 7, lines 3-18). "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re*

Art Unit: 1796

Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). MPEP § 2144.05 (IIA). At the time of the invention, it would have been obvious to a person having ordinary skill in the art to heat the reaction mixture to a polymerization temperature at least 10°C above the starting temperature, with the motivation of speeding the polymerization process, as a person having ordinary skill in the art recognizes that higher temperatures result in faster polymerization times.

Costanza teaches potassium persulfate as the water-soluble free radical initiator in Example 3, and benzoyl peroxide as the oil-soluble free radical initiator in Example 3. Although *Costanza* does not explicitly state the solubility of these initiators at 20°C and atmospheric pressure in demineralized water, these properties have been held intrinsic to the initiator. The applicants' specification teaches di-alkalimetal salts of peroxodisulfuric acid (page 8, lines 5-7 of specification) such as the potassium persulfate taught by *Costanza*, and dibenzoyl peroxide (page 9, line 2 of specification), which is benzoyl peroxide; both initiators are taught to possess these solubility properties (page 7, line 25 through page 8, line 2).

Costanza is silent regarding the water-soluble free radical initiator initiating polymerization at the starting temperature; this property has been held intrinsic since the same types of water-soluble initiators in the instant specification are taught by *Costanza*, and the reaction temperatures of *Costanza* (T_s 50°C, T_E >80°C) overlap the ranges of the instant claims ($T_s \geq 30^\circ\text{C}$ to $\leq 120^\circ\text{C}$, $T_E \geq 80^\circ\text{C}$ to $\leq 200^\circ\text{C}$).

Costanza is silent regarding the oil soluble free radical initiator having a half-life of ≥ 10 hours at the starting temperature and ≤ 5 hours at the end reaction temperature.

Art Unit: 1796

These properties have been held intrinsic to the polymerization system, in that *Costanza* teaches the same oil-soluble initiators of the instant specification, and the reaction temperatures of *Costanza* (T_s 50°C, T_E >80°C) overlap the ranges of the instant claims ($T_s \geq 30^\circ\text{C}$ to $\leq 120^\circ\text{C}$, $T_E \geq 80^\circ\text{C}$ to $\leq 200^\circ\text{C}$).

Costanza is silent regarding the water being demineralized. The use of demineralized water is common in the art of aqueous emulsion polymerizations, as hard water tends to aggregate anionic surfactants. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to use demineralized water for the emulsion polymerization, with the motivation of preventing aggregation of the polymer particulates.

Regarding claim 6: *Costanza* teaches the water-soluble initiator from 0.01-0.2% by weight, and the oil-soluble initiator from 0.1-2.0% by weight (column 1, lines 62-68) based on the total monomer content.

Regarding claim 7: *Costanza* teaches polymerizing below the boiling point of the lowest boiling monomer or under superatmospheric conditions (column 7, lines 14-18). Thus, *Costanza* implicitly teaches the reaction mixture not boiling at any temperature.

Regarding claim 9: *Costanza* teaches tert-butyl peroxybenzoate (column 5, line 68). This initiator is taught by name, and is taught as an equivalent to the benzoyl peroxide used in Example 3. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to try one of the initiators from the finite list of oil-soluble initiators, with a reasonable expectation of successfully polymerizing the reaction.

Regarding claim 10: *Costanza* shows the reaction temperature held at 50°C for 10 hours following the monomer metering (column 8, lines 34-44).

Regarding claim 11: *Costanza*'s Example 3 product is worked up in the same manner as Example 1 of *Costanza* (column 8, lines 15-27). This process involves stream stripping (column 8, line 24).

Regarding claims 14 and 15: Sodium lauryl sulfate is an emulsifier, and is used 5 parts by weight monomer to be subjected to the free radical polymerization (column 8, line 17).

Regarding claim 16: Example 3 of *Costanza* shows 50% by weight water in the starting reaction mixture (column 8, lines 33-44) based on the total amount of water.

Regarding claim 17: *Costanza* teaches adding the dispersant from T_S over the course of two hours; at the onset, a portion less than 50% by weight will be present.

Regarding claim 18: The Example 3 experiment of *Costanza* shows addition of a pre-emulsified mixture into a reactor (column 8, lines 33-44); monomer is present in the pre-emulsion.

Regarding claim 19: *Costanza* teaches adding the dispersant from T_S over the course of two hours; water soluble initiator is present in this emulsion. At the onset, a portion less than 50% by weight will be present. Furthermore, a small amount from 10-30% by weight is stated to be preferred in the initial charge to ensure substantially complete polymerization (column 6, lines 57-64). At the time of the invention, it would have been obvious to a person having ordinary skill in the art to ensure optimum solids conversion (col 6, lines 57-60).

Regarding claim 20: *Costanza*'s Example 3 (column 8, lines 33-44) shows at least 50% of the benzoyl peroxide (oil soluble initiator) added to the reactor initially.

Regarding claim 21: *Costanza* teaches the addition (metering) of monomer over a period of 10 hours (Example 3).

Regarding claim 22: The water soluble free radical initiators of *Costanza* (Example 3) are pre-emulsified before addition into the reactor, allowing for all of the water-soluble free-radical initiator to be added during monomer metering.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,003,871 to *Costanza et al.* as applied to claim 1 above, in view of U.S. Patent No. 5,908,872 to *Glück et al.* (hereinafter referred to as '872).

Regarding claim 5: *Costanza* teaches the process of claim 1 as set forth above.

Costanza suggests the T_s can be from 10-40°C (*Costanza* col. 3, lines 45-50) and that the T_E may be 80°C or above (*Costanza* col. 7, line 5). *Glück* teaches a polymerization occurring with the starting temperature at 90°C, ending at a temperature of 130°C (*Glück* column 2, line 65 through column 3, line 9). *Costanza* and *Glück* are analogous art in that they are drawn to the same field of endeavor, namely aqueous polymerizations with dual initiators, used for the purpose of producing polymers from vinylically unsaturated monomers. At the time of the invention, it would have been obvious to a person having ordinary skill in the art to optimize the temperature of *Costanza*, with the motivation of increasing the conversion of monomers (*Glück* col. 1, lines 14-16 and 35-40).

(10) Response to Argument

Appellant's arguments filed September 30th, 2009 have been fully considered but they are not persuasive.

Rejection 1: The rejection of claims 1, 4-11 and 14-22 under 35 U.S.C. 103(a) over *Costanza et al.* must be maintained for the following fundamental reasons (page 5):

(A) In response to the applicant's arguments that the following elements are not recited in the prior art of reference:

(1) Applicant argues that *Costanza* does not show adding at least a portion of dispersant to at least a portion of water containing at least a portion of an oil-soluble free radical initiator.

In response, these limitations are shown by *Costanza*, Example 3. *Costanza* states shows adding at least a portion of the dispersant to at least a portion of water containing at least a portion of an oil-soluble free-radical initiator (see *Costanza* Example 3).

Since the heating step (b) to T_s is optional in instant claim 1, the metering of the pre-emulsion containing potassium persulfate presents an order-of-mixing case of *prima facie* obviousness, in that all required limitation elements are present in the reactor prior to polymerization. Claim 1 does not require the

addition of anything other than monomer after T_s has been reached. Thus, Claim 1 was examined with the interpretation that only the requisite components must be in place before metering and polymerization; this is demonstrated clearly in Example 3 of *Costanza*.

(2) Applicant argues that *Costanza* does not teach the activity of the initiators at the specified temperatures.

In determining the activity of the initiators, the Office looked at the instant specification as a guide in determining whether the water-soluble and oil-soluble initiators of *Costanza* contain the requisite half-lives at the specified temperatures. In light of the instant specification reciting the two initiators present in *Costanza* Example 3 by name, the water-soluble initiator being potassium persulfate (dipotassium peroxydisulfate; page 7, line 37) and the oil-soluble initiator benzoyl peroxide (dibenzoyl peroxide; page 8, line 23), and because the temperatures specified in *Costanza* are within the recited ranges of the instant specification (page 13, lines 1-5), the half-lives of the *Costanza* initiators were determined to fulfill the recited active/inactive and half-life limitations. It has been determined that these properties are implicit in *Costanza*.

(3) *Costanza* fails to set forth an anticipatory Example wherein the temperature increases from T_s to T_E . However, *Costanza* suggests that the temperature can be increased from T_s to T_E over the course of the reaction as the polymerization heads to completion (*Costanza*, col. 7, lines 3-10). A person having ordinary skill in the art consider increasing the temperature during the

Art Unit: 1796

course of the reaction through routine experimentation, with the motivation of increasing the speed of the reaction, which will allow more product to be produced in a shorter period of time, resulting in cost and efficiency savings.

(4) Applicant argues that *Costanza* does not set forth increasing the temperature of the reaction to 10°C or higher during the course of the reaction.

Costanza teaches that the temperature can be elevated up to 80°C or above as the reaction heads towards completion (*Costanza*, col. 7, lines 3-10); Example 3 shows the temperature occurring at 50°C. This is a larger difference than 10°C, and a person having ordinary skill in the art recognizes that an increase in temperature allows for increased reaction speed, and would be motivated to increase temperature $\geq 10^\circ\text{C}$ through routine experimentation (MPEP § 2144.05) recognizing that this reduces the amount of time for the reaction to occur.

(B) Applicant suggests that a person having ordinary skill in the art would not be motivated to carry out the reaction in the order recited.

With respect to the argument regarding the order of steps (a)-(d), an order is not implied by the current recitation of claim 1. The heating step (b) is stated to be optional, and at best an order of mixing protocol (MPEP § 2144.04 IV. C. - Changes in Sequence of Adding Ingredients) is invoked in steps (a)-(c), prior to the metering step (d). Example 3 of *Costanza* shows all requisite components (a)-(c) in the reactor at the onset of the reaction; monomers are metered as required by limitation (d).

(C) In response to applicant's argument that a person having ordinary skill in the art would not be motivated to increase the temperature 10°C during the reaction ($T_E \geq T_S + 10^{\circ}\text{C}$), it is noted that *Costanza* teaches temperature elevation to 80°C as the reaction heads towards completion (*Costanza*, col. 7, lines 3-10); Example 3 shows the reaction temperature at 50°C . This is a difference of 30°C , and a person having ordinary skill in the art recognizes that an increase in temperature allows for increased reaction speed, and would be motivated to increase temperature $\geq 10^{\circ}\text{C}$ through routine experimentation (MPEP § 2144.05) recognizing that this reduces the amount of time for the reaction to occur.

The mechanism of polymerization of the claimed method (pages 5-8)

(i) The Examiner agrees with the characterization of this point.

(ii) The Examiner disagrees with the characterization that the obtained mixture is heated to the starting reaction temperature T_S . Claim 1 (b) recites optionally heating the reaction mixture to a starting temperature T_S . The T_S has been interpreted as the starting temperature of *Costanza* (50°C in Example 3). The Claim 1 step (b) limitation has been given little patentable weight in the Office actions of record as an optional limitation. Since the heating limitation is optional, a_1 - a_5 can be added at the polymerization temperature as exemplified by *Costanza* Example 3; no order is implied in the recited method.

(iii) The Examiner agrees with the characterization of this point.

(iv) The Examiner agrees with the characterization of the ending temperature/

Regarding characterizations of the monomer feeds II and III metered into the reaction upon reaching 95°C, these features are not claimed, and have not been examined. Regarding the micelle formation arguments, these features are not claimed, and have not been given weight.

Concerning a dispersant and emulsion polymerization (page 7)

The features presented in this section are not recited by the instant claims. *Costanza* shows the use of a dispersant (sodium lauryl sulfate) for the emulsion polymerization of Example 3.

Notes (page 7):

(1) The Examiner is maintaining the opinion that step c₄ is optional. If the total amount of monomer is added in step c₄ is required, then step (d) can not exist, since these components share the same antecedent basis; if the remaining monomers are added in step c₄, monomers will not be able to be metered in step (d).

Furthermore, the monomers can be added in the first step, with no remaining monomer to be added, rendering step (d) an unrecited optional step, if step c₄ is requisite.

(2) A portion of dispersant (sodium lauryl sulfate) is added as part of the pre-emulsion prior to the onset of polymerization. As the recited heating step (b) is optional, a portion of the dispersant has been interpreted as being present prior to the onset of polymerization.

A disclosure of *Costanza et al.* (page 8):

The Examiner agrees with the characterization of *Costanza*'s Example 3. However, *Costanza* teaches toward embodiments not set forth in the Examples, such as a temperature elevation step (col. 7, lines 1-10). A person having ordinary skill in the art would be motivated, through routine optimization, to modify the temperature profile of *Costanza* with a heating segment at the end, with the motivation of speeding up the reaction (MPEP § 2144.03) and forcing the reaction to substantial completion (*Costanza* col. 7, lines 3-10).

Distinguishing the claimed method and the method of *Costanza* (pages 8-13)

General description

(1) In response to appellant's argument of *Costanza* polymerizing at a constant rate, the limitation (claim 1d), *Costanza* teaches varying the temperature towards the completion of the reaction (*Costanza* col. 7, lines 3-10). A person having ordinary skill in the art would recognize that raising the temperature at this point will speed the reaction and potentially obtain a higher yield by increasing the activity of the radical initiators.

The applicant's characterization of raising the temperature "if required" is not a limitation in the claims; the temperature is *optionally* raised; this limitation is not required, and was given little patentable weight during examination.

In response to appellant's characterization of the Final Office Action of April 1, 2009, the Examiner would like to clarify that the order of mixing, not the order of

Art Unit: 1796

reaction is evident of *prima facie* obviousness. Steps a-c imply no order since these components are merely mixed, and only in step (d) of the instant specification does the reaction begin. The components are in the reaction vessel prior to the reaction, and the order of addition of the components to the reactor has been held by case law to be evident of obviousness.

Specific differences

(2) Applicant argues that *Costanza* is silent regarding dispersant in the initial charge.

In response, *Costanza* teaches dispersant as being present in the pre-emulsion; as the pre-emulsion is added just prior to polymerization, at least a portion of dispersant is present in the initial charge. The line of distinction clearly identifying this point is arbitrary in the claims as presently recited, and has been interpreted as satisfying the requirement that a dispersant is present.

(3) Applicant argues that the water-soluble and oil-soluble initiators are both active at the same temperature.

In response, both the water-soluble initiator and the oil-soluble initiator of *Costanza* are present in solution; these are the same types of initiators utilized in the instant specification, by name, and the temperature is set such that it is within the T_E and T_S ranges from the instant specification. The Office has held this to satisfy the half-life requirements at the specified temperature.

(4) In response to applicant's argument that temperature is constant, Example 3 of *Costanza* does show a constant temperature; however *Costanza* recognizes varying the temperature towards the completion of the reaction (*Costanza* col. 7, lines 3-10). A person having ordinary skill in the art understands that raising the temperature at this point will speed the reaction and potentially obtain a higher yield by increasing the activity of the radical initiators.

The feature of polymerization increasing a temperature during metering such that the polymerization of residual monomers occurs inside the polymeric particles is an unrecited feature. In response to the polymerization occurring in the same order, polymerization does not initiate until step (d); steps (a-c), in the absence of the *optional* heating step (b) adding the ingredients in a different sequence prior to polymerization is an order-of-mixing case of obviousness.

(5) Applicant alleges that a person having ordinary skill in the art would not be motivated to increase the reaction temperature at least 10°C greater than the starting temperature.

In response, *Costanza* teaches that the reaction mixture can be heated up to 80°C or above as the polymerization heads to substantial completion (col. 7, lines 3-18). Heating the reaction from 50°C to 80°C is a difference of 30°C. "[W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). MPEP § 2144.05 (IIA). At the time of the invention, it would have been obvious to a person having ordinary skill in the art to heat the

Art Unit: 1796

reaction mixture to a polymerization temperature at least 10°C above the starting temperature, with the motivation of speeding the polymerization process, as a person having ordinary skill in the art recognizes that higher temperatures result in faster polymerization times. A person having ordinary skill in the art recognizes that increasing the temperature of a reaction will reduce the time of the reaction substantially; with that in mind, potential cost and efficiency benefits can be realized by producing a greater amount of polymer in a shorter period of time.

(6) Applicant states that a different motivation for increasing the reaction temperature is specified.

In response, a person having ordinary skill in the art recognizes that raising the temperature at this point will speed the reaction and potentially obtain a higher yield by increasing the activity of the radical initiators.

(7) In response to the applicants arguments concerning activation of the initiators, *Costanza* teaches increasing the temperature up to 80°C or above as the reaction proceeds towards substantial completion (col. 7, lines 3-10). This temperature range overlaps the ending temperature range (>50°C) set forth in the instant specification (page 13, line 20); as such, the oil soluble initiator has been examined with the interpretation of becoming active at this temperature, based upon the evidence in applicants' disclosure..

(8) In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., polymerization inside the polymer particles) are not recited in the rejected claim(s).

Art Unit: 1796

Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

(9) Applicant argues that *Costanza* teaches away from high temperatures.

In response, the temperature, as a numerical value, is not a feature of claim 1. The rejection of Claim 5, which utilizes *Glück* as a secondary reference, addresses this limitation. In response to the argument that *Costanza* teaches away from raising the temperature, *Costanza* teaches that the temperature may be raised above 80°C towards completion. A person having ordinary skill in the art recognizes that a higher reaction temperature will reduce the polymerization time, and would be motivated through routine experimentation to optimize the temperature conditions to control the reaction speed and quality of product

Rejection 2: The rejection of claim 5 under 35 U.S.C. 103(a) over *Costanza* (US 4,003,871) and *Gluck* (US 5,908,872) must be maintained for the following reasons:

The process of *Gluck et al.* versus the process of *Costanza et al.* (pages 14-16)

(a) Applicant argues that *Costanza* and *Gluck* are non-analogous art, in that *Gluck* utilizes a hybrid suspension/emulsion polymerization.

In response to applicant's argument that *Glück* and *Costanza* are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the

Art Unit: 1796

applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, *Glück* and *Costanza* are concerned with the same technical features; both references teach aqueous polymerizations of hydrophobic monomers via means of a two-catalyst system. Suspension polymerizations are similar to emulsion polymerizations in that hydrophobic monomers are polymerized in an aqueous environment, producing polymeric bead particles. *Glück* further teaches that suspension stabilizers, akin to the dispersants of the instant claims, may be used (*Glück*, col. 2, line 34). Thus, *Costanza* and *Gluck* are drawn from the same field of endeavor, and are combinable references.

Glück is relevant to *Costanza*, as *Glück* teaches the reaction occurring at elevated temperatures compared to the Examples shown by *Costanza* (see *Glück* col. 2, lines 55-65). *Gluck* teaches that the elevated temperature is allows for a higher conversion of monomer (*Glück*, col. 1, lines 15-22), which is a stated goal of *Costanza* (*Costanza* col. 1, lines 50-53 and col. 2, lines 36-38). At the time of the invention, it would have been obvious to a person having ordinary skill in the art to increase the polymerization temperature of *Costanza*, with the motivation of increasing the conversion of monomer.

(b) In response to the applicant's arguments that *Gluck* teaches only oil-soluble initiators, activation of the two distinct initiators at different temperatures is the only limitation imposed by *Glück* in regards to the initiator, (*Glück* col. 3, lines 55-64), and is a feature utilized in the instant recited invention.

Art Unit: 1796

The applicant argues the applied references individually, and one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

(c) In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). As established above, *Glück* shares the feature of utilizing a two-catalyst system at elevated temperatures as a means of improving polymerization efficiency. A person having ordinary skill in the art would be motivated to modify *Costanza* by polymerizing at an elevated temperature, with the expectation of ensuring the decomposition of both initiators (*Glück* col. 1, lines 55-64), thereby increasing the polymer yield (*Glück*, lines 14-16; "low residual monomer content").

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Art Unit: 1796

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Michael Salvitti/

December 14th, 2009

Conferees:

Mark Eashoo

/Mark Eashoo/

Supervisory Patent Examiner, Art Unit 1796

/Benjamin L. Utech/

Primary Examiner